SECTION 12

PART A

12A - 1. LIVE POWER TAKE-OFF

Part A

LIVE POWER TAKE OFF
Table of Contents

Operation No.	Description	Page No.
12A.1	Specification	12A - 3
12A.2	Left hand side cover - Removal	12A - 5
12A.3	Left hand side cover - over haul	12A - 5
12A.4	PTO shaft , Bearing and oil seal removal ...	12A - 6

12A . 1SPECIFICATION

540 rev/min PTO speed	-	1790 engine rev/min
Engine to PTO shaft ratio	-	3.31 : 1 (16T drives 53T)
No. of splines	-	6
Outside diameter	-	1 3/8 inch (34.80 mm).

BOLT TORQUES

Nuts, rear seal retainer to centre housing	–	83-125 lbf.ft (113-169 Nm).
Nuts, rear seal retainer to drawbar bracket	–	170-192 lbf.ft (230-260 Nm).

SPECIAL TOOLS

SER / 046 Seal replacer

GENERAL

DESCRIPTION

Single Speed Power Take off (Fig.1)

540 rev/min live speed only.

The PTO shaft projects from the rear of the tractor. It is supported at the rear by a ball bearing and at the front by a needle roller bearing housed in the end of the hydraulic pump drive shaft. Splined onto the front end of the PTO shaft is a sliding gear which is operated by three position selector lever.

When the selector lever is moved rearwards the sliding gear moves forwards and the internal splines on the gear engage with the splines. on the hydraulic pump drive shaft. The PTO is then driven at a speed proportional to that of the engine, the standard shaft speed of 540 rev/min occurring at around 1790 engine rev/min for example.

When the selector lever is moved to the mid –position, the sliding gear moves to neutral and the PTO drive is disengaged.

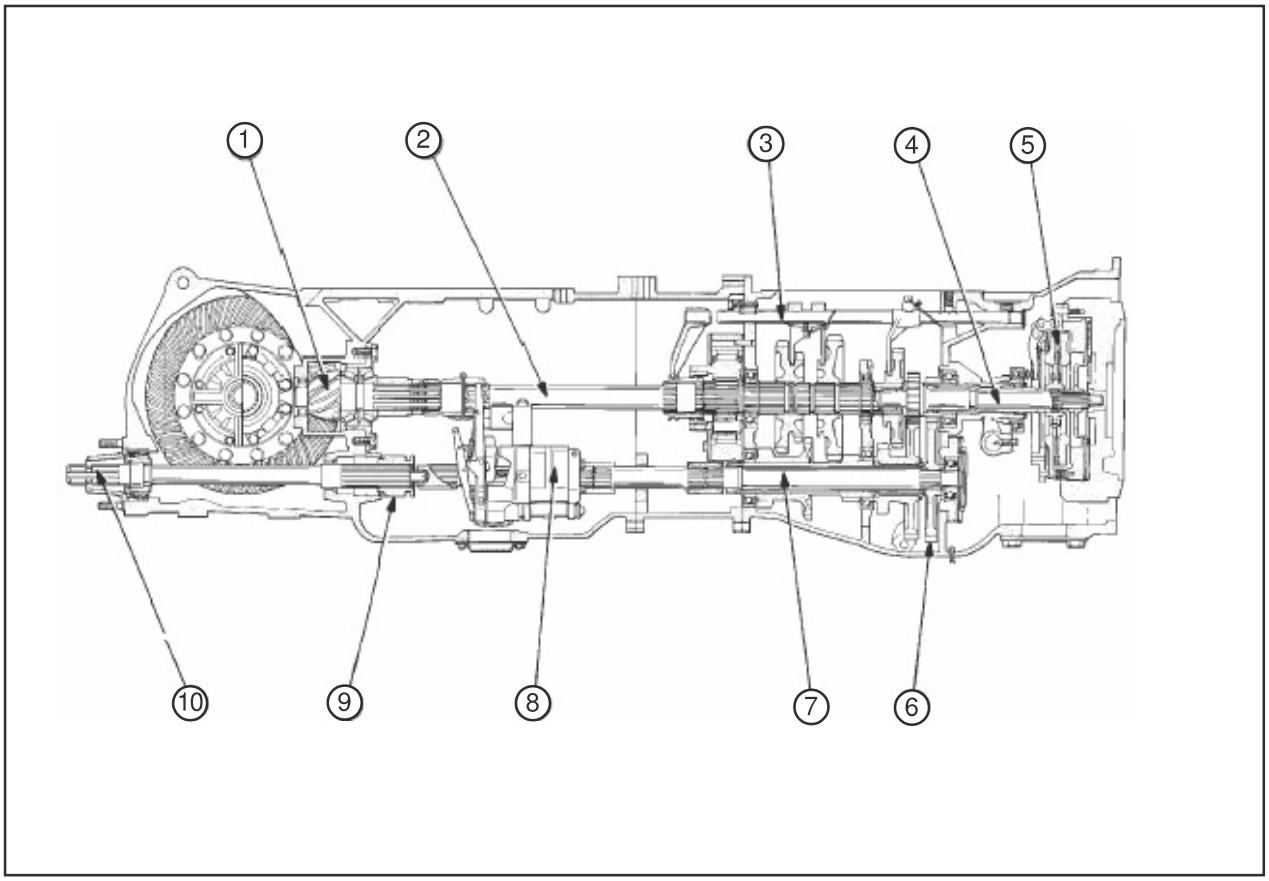

FIG-1. LIVE SPEED POWER TAKE-OFF

1. Rear differential
2. Drive shaft
3. Gear box
4. PTO input shaft
5. PTO clutch plate
6. PTO contant mesh gears
7. PTO layshaft
8. Scotch yoke pump, Three point lift
9. Coupler
10. PTO shaft (540 rev/min)

12A .2 LEFT-HAND PTO SIDE COVER

Removal and Refitment

Removal

1. Drain the transmission oil to the low mark on the dipstick.
2. Remove the auxiliary hydraulics pipelines from the side cover.
3. Disconnect the wires and remove the PTO neural safety switch.
4. Remove the six bolts.
5. Remove the side cover.
6. Remove and discard the gasket.

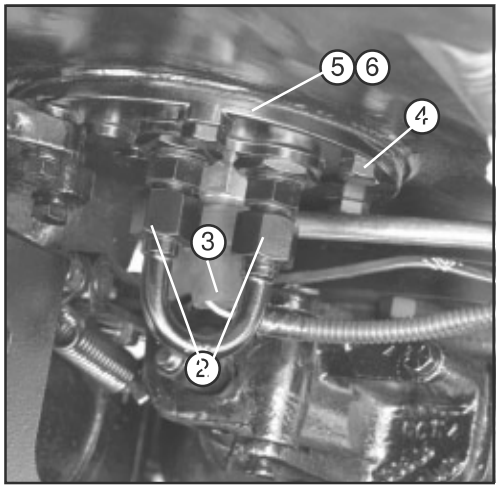

Fig 2

Refitment

7. Fit a new gasket.
8. Locate the shift lever into groove of the shift collar.
9. Seal the six bolts threads with Loctite and tighten the bolts.

12A . 3 LEFT-HAND PTO SIDE COVER

Overhaul

Diassembly

1. Remove the side cover. (Ref operation 12A.2)
2. Drive out and discard the roll pin.
3. Remove the PTO lever.
4. Remove the ring lock.
5. Remove the shift lever.
6. Remove and dicard the 'O'ring.
7. Remove the detent plunger and spring.

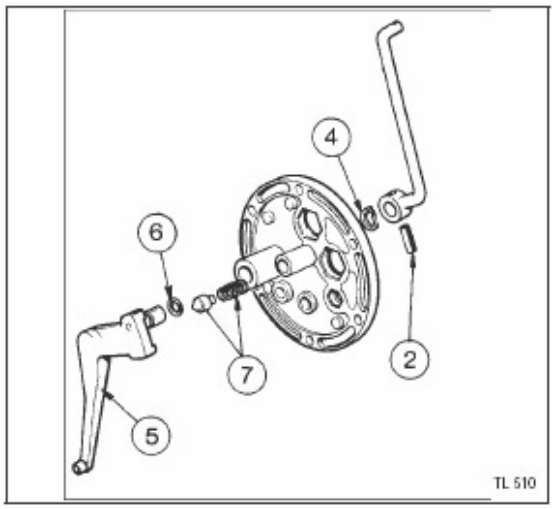

Fig 3

Reassembly

8. Reverse procedures 1 to 7 except:
   a. Fit a new 'O' ring.
   b. Fit a new roll pin.

12A - 4 PTO SHAFT, BEARING AND OIL SEAL

Removal and Refitment

Special Tools:

SER / 046 Seal Remover

Removal

1. Drain the transmission oil.
2. Unscrew the PTO cap.
3. Remove the 4 bolts from the cover and two centre bolts and washers. refer arrow
4. Remove the PTO oil seal housing.
5. Withdraw the shaft from rear axle.
6. Remove the snap ring.
7. Remove the bearing from the PTO shaft.

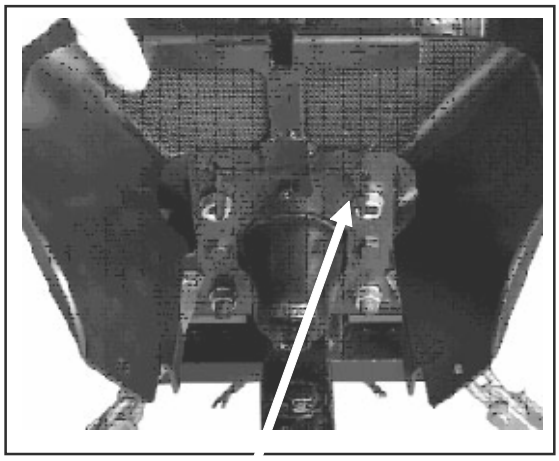

Fig 4

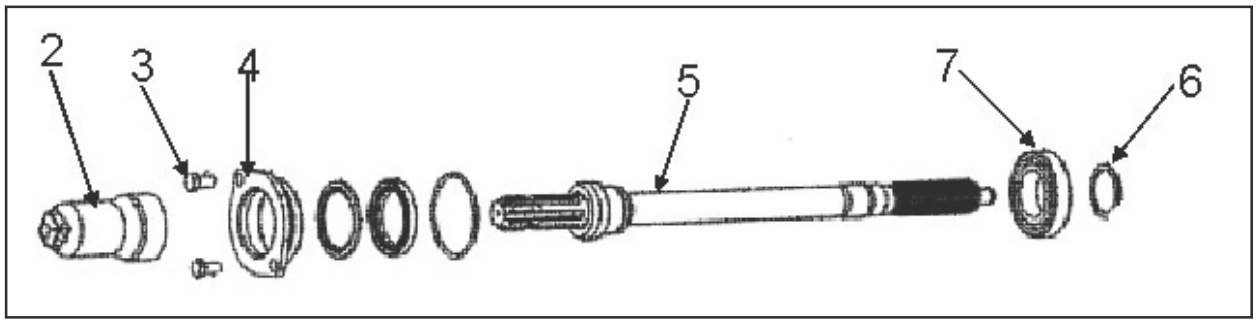

Fig 5

Refitment

8. Using SER / 046 to press the oil seal into PTO housing.
9. Fit a new 'O' ring.
10. Using a hydraulic press, press the new ball bearing onto the PTO shaft.
11. Fit a new snap ring and ensure that it locates correctly in its groove.
12. Slide the PTO shaft into the rear housing, taking care to keep it horizontal to align the internal spline.
13. Reinstall the PTO housing to the centre housing.
14. Tighten the four retaining nuts with spacers to a torque of 83-125 lbf.ft.(113 - 169 Nm)
15. Tighten the two bolts retaining the draw bracket to the check chain bracket to a torque of 170-192 lbf .ft. (230 - 260 Nm)